

GRAPHICAL PASSWORD: A NEW SECURITY MECHANISM

Tushar Korde, Ajay Jadhav, Mahesh Nikam, Kishor Maskar

Students, Dept. of Information Technology, MET'S BKC IOE Nasik, Maharashtra, India

Abstract – Security is crucial part of any computerized system. Many security mechanism are available in market such as pattern lock, pin lock, password mechanism. This security mechanism provides security to user but this type of password can be hacked or recorded using different security attacks like shoulder surfing, recording keystrokes of user keyboard and piggybacking etc. to avoid such problem we are proposing a system which combines a CAPTCHA and graphical password technique to generate password which is based on sequence of images and CAPTCHA character associated with it.

Key Words: CAPTCHA, Security, Graphical password contexts, sequence of CAPTCHA and images.

1. INTRODUCTION

1.1 Project Idea

Idea behind project is to provide new way of password to people who are currently facing many security problems. Our proposed system will provide a Graphical Password which will difficult to guess and innovative. It is observed that user can remember images more easily rather than letters and digits, therefore we are using sequence of set of images with associated CAPTCHA to them as our password. Hence it improves the quality of security.

1.2 Motivation of the Project

The current traditional system are easily influence with relay attack, shoulder surfing, phishing due to simple store and pop method hence we decide to use CAPTCHA for overcome those problem with combination of unique CAPTCHA and sequencing.

2. Literature Survey

Recently, M. Alsaleh, M. Mannan, and P. C. van Oorschot, proposed a password using mouse click or touchpad on CAPCHA images to avoid attacks done from keystrokes. i.e. Attacker records keystrokes and can fetch the password.

3. Problem Definition and Scope

3.1 Problem Statement

In this digital learning age, as confidential data transfer is increasing so security is becoming an important factor, so to get applications more secured we are developing a security application. To develop new security mechanism that will include graphical password scheme (CAPCHA), to generate new reliable password authentication.

3.1.1 Goals and Objectives

- i) The main objective of the proposed system is to generate Graphical Password using CAPTCHA.
- ii) Another main objective of this system is to provide new and unique way of security.

3.1.2 Statement of Scope

- i) Basically our application is a standalone system which provides security to an individual application.
- ii) This is an android security application
- iii) The app contain group of images and CAPTCHA and by selecting sequence of images and CAPTCHA index correctly user gets authenticated successfully.

3.1.3 Software Context

The system has a base of android application and website.

3.1.3 Major Constraints

- i) Software is designed in the way that each activity like managing user's profile, searching app, recommending new app, getting detail information of app to the user, will be treated separately.
- ii) It is tested with positive negative inputs.

3.2 Methodologies of problem solving and efficiency issues

- i) We are introducing standalone security application, in which user have to enter the sequence of password which will get register in database.
- ii) Then at admin side sequence will stored and will display CAPTCHA images to user, user have to see that CAPTCHA and enter the sequence wise password.
- iii) If user enters the password in proper sequence then successful authentication is done, otherwise user will not get authenticated.

3.3 Scenario in which multi-core, embedded and Distributed Computing is used

Nowadays, every android phone has multiple core processors and embedded systems. Android smartphones that will be used by the clients and the database maintained on the admin's end will have distributed computing.

3.4 Outcome

- [1] New Way of security.
- [2] User Friendly Standalone System.
- [3] CAPTCHA images and sequence enhances the performance of our system.
- [4] It'll reduce the complication of remembering password just we have remember the sequence.

4. Detailed Design

4.1 Introduction

With the wide spread use of mobile devices in recent years, a huge number of mobile Apps have been developed for mobile users. Due to this security is main issue brought up in this era. With use of CAPTCHA we can set new mechanism of security which has certain advantages over traditional security system. User have to enter sequence of password initially and then have to choose application for which he/she have to provide password.

4.2 Architectural Design

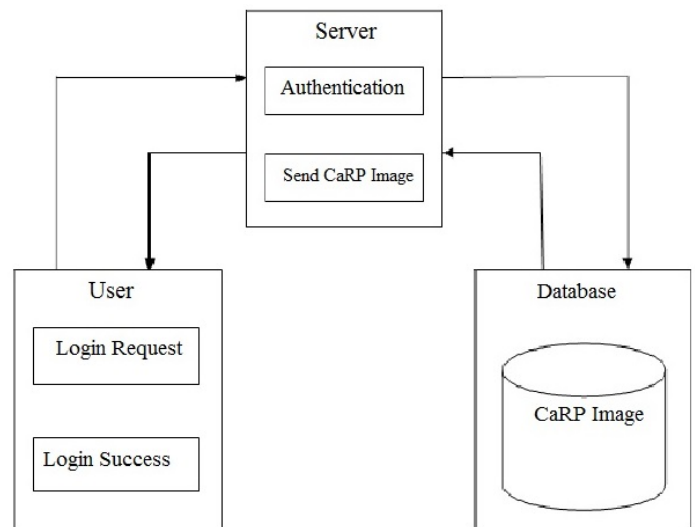


fig1: Architecture of System

1. User : User have to create password of his choice by selecting sequence of images and CAPTCHA index and after creating password, simply sign in by entering correct CAPTCHA character at selected index
2. Server: In our application, server is nothing but the device's processing unit which validates the password and process the authentication request.
3. Database: Every time, when user selects the images and CAPTCHA index it will be get stored in database and when user signed in, index of CAPCHA character will get match with database for successful sign in.

5. Summary and Conclusion

Thus we have concluded a novel approach of security using sequence of CAPTCHA images which generates graphical password, and provides an innovative and user friendly way of authentication.

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BIOGRAPHIES



Tushar Korde appeared for BE degree from the Department of Information Technology, MET's Bhujbal Knowledge City IOE, Nashik .



Ajay Jadhav appeared for BE degree from the Department of Information Technology, MET's Bhujbal Knowledge City IOE, Nashik .



Mahesh Nikam appeared for BE degree from the Department of Information Technology, MET's Bhujbal Knowledge City IOE, Nashik .



Kishor Maskar appeared for BE degree from the Department of Information Technology, MET's Bhujbal Knowledge City IOE, Nashik .